

**REMARKS**

Claims 1-20 are all the claims pending in the application. Claims 11-20 are withdrawn from consideration as being drawn to a non-elected invention. Claims 1-10 presently stand rejected.

The finality of the Office Action is restarted in view of the Examiner's error of not maintaining the rejection of claim 8 under 35 U.S.C. § 103(a) in the previous Office Action.

Claims 1-7, 9 and 10 are rejected under 35 U.S.C. § 102(b) as being anticipated by Mussell et al. (5,620,807).

Claim 8 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Mussell et al.

**Analysis**

Claims 1 and 3 are in independent form; therefore, the following discussion is initially directed to these independent claims.

Claim 1 is directed to an electrode for a fuel cell that has a catalyst layer and a porous polymer having numerous pores formed in the material itself. The catalyst layer contains a solid polymer electrolyte and catalyst particles.

The Examiner pointed out the following position to the present claims. That is, Applicant submits that the porous layer [4] of Mussell "does not contain any catalysts" and that the "alleged porous polymer is provided at the surface of the catalyst layer [1], but not within the catalyst layer as in the present invention". This argument is not persuasive, as the claims are not

required to have polymer within the catalyst layer and hence, such argument is outside the scope of the present claims.

However, the real difference between Applicant's invention and Mussell's patent is not absolutely the difference of composed parts of catalyst layer or gas diffusion layer wherein the pores are formed in these embodiments comprising the mixture of polymer materials and fillers or other additives as reported in Mussell, but the special feature of polymer material itself of whether this composed material has the numerous pores or not. There is no doubt that there has been no report so far on this porous material applied fuel cell technologies as shown in Fig. 10.

The special pore feature of the polymer material itself has never been applied in fuel cell technologies previously. With the present invention the fuel cell including the claimed porous polymer shows excellent hydrophobicity and gas diffusivity.

Furthermore, the additional explanation of the disclosed phase-inversion process was provided to make clear the above-mentioned difference between the present invention and Mussell, by which process the pore-formation as shown in Fig. 10 and recited in claim 1 is attained, but not obtainable by the process disclosed by Mussell.

In view of the foregoing, claim 1 is patentable.

Turning to claim 3, this claim is patentable for the same reasons as claim 1. Namely, Mussell fails to disclose a porous polymer having numerous pores of the material itself. Thus, claim 3 is not anticipated by Mussell.

AMENDMENT UNDER 37 C.F.R. § 1.116  
U.S. Appln. No. 09/497,515

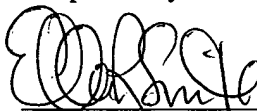
The remaining rejections are directed to the dependent claims. These claims are patentable for at least the same reasons as the independent claims 1 and 3, by virtue of their dependency therefrom.

### Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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WASHINGTON OFFICE



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PATENT TRADEMARK OFFICE

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## APPENDIX

### VERSION WITH MARKINGS TO SHOW CHANGES MADE

#### IN THE CLAIMS:

**The claims are amended as follows:**

1. (Four Times Amended) An electrode for a fuel cell comprising:

a catalyst layer; and

a porous polymer having numerous pores of the porous polymer material itself [therein] ,

wherein said catalyst layer contains a solid polymer electrolyte and catalyst particles.

3. (Three Times Amended) An electrode for a fuel cell comprising:

a catalyst layer;

a gas diffusion layer; and

a porous polymer having numerous pores of the porous polymer material itself [therein],

wherein said catalyst layer contains a solid polymer electrolyte and catalyst particles, and  
said gas diffusion layer contains an electro-conductive porous substrate.